

Title (en)

VARIABLE VALVE TIMING CONTROL DEVICE FOR INTERNAL COMBUSTION ENGINE

Title (de)

STEUERVORRICHTUNG MIT VARIABLER VENTILZEITSTEUERUNG FÜR EINEN VERBRENNUNGSMOTOR

Title (fr)

DISPOSITIF DE COMMANDE DE SYNCHRONISATION DE SOUPAPE VARIABLE POUR MOTEUR À COMBUSTION INTERNE

Publication

EP 2824295 A4 20160413 (EN)

Application

EP 13758556 A 20130307

Priority

- JP 2012051347 A 20120308
- JP 2013056312 W 20130307

Abstract (en)

[origin: EP2824295A1] Intermediate position feedback control is executed when valve timing of an intake valve is at an intermediate lock position, an intermediate lock is needed, and an engine revolution speed is greater than a first engine revolution speed R1. Forced lock control is executed when the valve timing of the intake valve is at the intermediate lock position, the intermediate lock is needed, the engine revolution speed is less than the first engine revolution speed R1, and the intermediate position feedback control is not being executed. As a result, even when the engine revolution speed increases in the presence of a demand that the valve timing needs to be in the intermediate lock position, it is possible to maintain the valve timing at the intermediate lock position.

IPC 8 full level

F01L 1/356 (2006.01); **F01L 1/344** (2006.01); **F02D 13/02** (2006.01); **F02D 41/14** (2006.01); **F02D 41/24** (2006.01); **F02D 41/06** (2006.01); **F02N 19/00** (2010.01)

CPC (source: EP US)

F01L 1/3442 (2013.01 - EP US); **F02D 13/02** (2013.01 - US); **F02D 13/0238** (2013.01 - EP US); **F02D 41/1401** (2013.01 - EP US); **F02D 41/2451** (2013.01 - EP US); **F01L 2001/34426** (2013.01 - EP US); **F01L 2001/34466** (2013.01 - EP US); **F01L 2001/34473** (2013.01 - EP US); **F02D 13/0219** (2013.01 - EP US); **F02D 41/062** (2013.01 - EP US); **F02D 2013/0292** (2013.01 - EP US); **F02D 2041/001** (2013.01 - EP US); **F02D 2200/101** (2013.01 - EP US); **F02N 19/004** (2013.01 - EP US); **Y02T 10/12** (2013.01 - EP US)

Citation (search report)

- [XYI] JP 2003172110 A 20030620 - AISIN SEIKI
- [Y] US 6330870 B1 20011218 - INOUE MASAOMI [JP], et al
- [XA] US 2002062816 A1 20020530 - TAKAHASHI TATSUHIKO [JP], et al
- See references of WO 2013133379A1

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WO2019210510A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

EP 2824295 A1 20150114; **EP 2824295 A4 20160413**; **EP 2824295 B1 20210804**; CN 104160118 A 20141119; CN 104160118 B 20161026; JP 5692459 B2 20150401; JP WO2013133379 A1 20150730; US 2015013626 A1 20150115; US 9157379 B2 20151013; WO 2013133379 A1 20130912

DOCDB simple family (application)

EP 13758556 A 20130307; CN 201380012756 A 20130307; JP 2013056312 W 20130307; JP 2014503544 A 20130307; US 201314377682 A 20130307